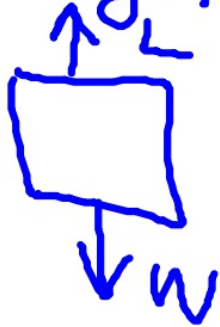


BOOK MASS = 5 kg
1 BOOK \times .5 kg = .5 kg

$$\text{Weight} = mg \\ = (5 \text{ kg})(9.8 \text{ m/s}^2)$$

$$\text{Weight} = 4.9 \text{ N} \downarrow$$



$$L \geq \text{Weight}$$

$$L = \text{Weight}$$

$$\text{distance (vertical)} = 1 \text{ m}$$

WORK?

$$F = L = 4.9 \text{ N} \uparrow$$

$$d_v = 1 \text{ m} \uparrow$$

$$d_H = 2 \text{ m} \rightarrow$$

$$\begin{aligned} \text{WORK} &= F_{\parallel} d \\ &= (4.9 \text{ N})(1 \text{ m}) \\ &= 4.9 \text{ Joules} \\ &= 4.9 \text{ J} \end{aligned}$$

UNITS FOR
WORK are
Joules (J)
WORK IS A
SCALAR

Keith HAD 4 BOOKS he
put them on a shelf 1.5m high
how much work DID Keith do?

$$[1 \text{ book mass} = .5 \text{ kg}] \times 4$$

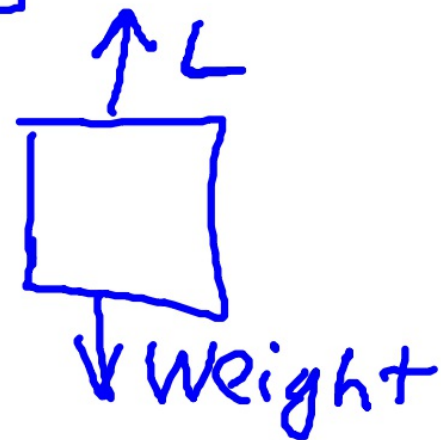
$$m = .5 \text{ kg} \times 4 = 2 \text{ kg}$$

$$\text{Weight} = m g$$

$$\text{Weight} = (2 \text{ kg})(9.8 \text{ m/s}^2)$$

$$= 19.6 \text{ N} \downarrow = \text{Lift Force w/}$$

$$\Delta v = 1.5 \text{ m}$$



$$\begin{aligned} \text{Work} &= F_{\text{net}} d \\ &= (19.6 \text{ N} \uparrow)(1.5 \text{ m} \uparrow) \end{aligned}$$

$$\text{Work} = 29.4 \text{ J}$$

Mr. QFF WANTS TO DO 1 PULL UP.

$$\text{MASS} = 98 \text{ kg}$$

$$d = .75 \text{ m}$$

How much WORK DO I DO?